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November 21, 2000

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
445 Twelfth Street, S. W. – Room TWB-204
Washington, D. C. 20554

Re: *Ex parte*, CC Docket No. 00-217, Application of SBC Communications Inc., Pursuant to Section 271 of the Telecommunications Act of 1996 to Provide In-Region InterLATA Services in Kansas and Oklahoma

Dear Ms. Salas:

On Monday, November 20, 2000, I was asked by the staff of the Common Carrier Bureau to submit into the record of the above-captioned proceeding a copy of the following report issued during the Oklahoma state commission's 271 proceeding:

> Amended Report and Recommendation of the Administrative Law Judge, *Application of Cox Oklahoma Telecom, Inc., for a Determination of the costs of, and Permanent Rates for the Unbundled Network Elements of Southwestern Bell Telephone Company*, Cause No. PUD 970000213 (June 30, 1998).

This document is the subject of arguments raised in AT&T's filed comments in this proceeding. In response to this request a copy of the attached report was provided to Rhonda Lien of the Bureau's Competitive Pricing Division on Monday, November 20, 2000.

Two copies of this Notice are being submitted to the Secretary of the FCC in accordance with Section 1.1206 of the Commission's rules.

Sincerely,

ATTACHMENT

cc: R. Lien

No. of Copies rec'd 0+1
LIABCDE

BEFORE THE CORPORATION COMMISSION OF THE STATE OF OKLAHOMA

APPLICATION OF COX OKLAHOMA TELCOM, INC., FOR A DETERMINATION OF THE COSTS OF, AND PERMANENT RATES FOR, THE UNBUNDLED NETWORK ELEMENTS OF SOUTHWESTERN BELL TELEPHONE COMPANY.	)	CAUSE NO. PUD 970000213
IN THE MATTER OF THE JOINT APPLICATION OF SOUTHWESTERN BELL TELEPHONE COMPANY AND AT&T COMMUNICATIONS OF THE SOUTHWEST, INC. FOR A DETERMINATION OF COSTS AND PERMANENT RATES FOR CERTAIN SOUTHWESTERN BELL TELEPHONE COMPANY SERVICES	)	CAUSE NO. PUD 970000442

HEARING: March 9-12, 1998, before the Administrative Law Judge

APPEARANCES: Amy R. Wagner, Roger K. Toppins, Michael C. Cavell and Curt M. Long, Attorneys
Southwestern Bell Telephone Company
Alistair Dawson, Parker Binion and Robert C. Allen, Attorneys
AT&T Communications of the Southwest, Inc.
Rick Chamberlain and Jennifer Johns, Attorneys
Cox Oklahoma Telcom, Inc.
Ron Comingdeer, Attorney
Chickasaw Telecommunications Services, Inc., Dobson Wireless, Inc. and Pioneer Long Distance, Inc.
Fred Gist, Attorney
Brooks Fiber Communications of Oklahoma, Inc. and Brooks Fiber Communications of Tulsa, Inc.
John W. Gray and Cece Coleman, Assistant General Counsel
Public Utility Division, Oklahoma Corporation Commission

AMENDED REPORT AND RECOMMENDATION OF THE ADMINISTRATIVE LAW JUDGE

I. Procedural Background

On July 29, 1996, AT&T Communications of the Southwest, Inc. (AT&T) filed an Application in Cause No. PUD 960000218 (PUD 96-218) seeking arbitration of certain unresolved issues regarding an interconnection agreement between AT&T and Southwestern Bell Telephone Company (SWBT), including the establishment of cost-based rates.

On October 16, 1996, Order No. 406117 was issued in PUD 96-218 bifurcating that proceeding and directing that a separate hearing be scheduled at a later date to present cost studies and to determine permanent rates for unbundled

network elements, customer change charges and interim and/or permanent number portability. It was also decided that interim rates for unbundled network elements and transport and termination of traffic would be decided in the first portion of the cause and all interim rates would be subject to true-up following Commission approval of permanent rates established in future hearings. The Commission issued its Order Regarding Unresolved Issues, Order No. 407704, in PUD-218 on December 12, 1996.

On April 8, 1997, AT&T filed an application in Cause No. PUD 970000175 (PUD-175) with an arbitration agreement and matrix attached containing the terms of the agreement which it alleged remained in dispute. AT&T requested that the Commission refer the matter to an Arbitrator to resolve all outstanding issues contained within the Interconnection Agreement and Matrix, including disputes regarding rates for certain services. Thereafter, the parties agreed to a procedural schedule which would result in a Commission order resolving all outstanding disputes and which would be applicable in both PUD-218 and PUD-175 with a final interconnection agreement to be filed thereafter.

On June 30, 1997, the Commission, in Order No. 413709, adopted the Arbitrator's rulings in PUD 96-218 and PUD 97-175, including his recommendation to adopt certain interim rates, pending the establishment of permanent rates in a later proceeding. Subsequently, on July 18, 1997, SWBT and AT&T jointly filed the final interconnection agreement which was approved by the Commission in Order No. 415164, dated August 18, 1997.

On May 2, 1997, Cox Oklahoma Telcom, Inc. (Cox) filed an Application in Cause No. PUD 970000213 (PUD 97-213) for a Determination of the Costs of and Permanent Rates for the Unbundled Network Elements of Southwestern Bell. Thereafter, SWBT and AT&T agreed to incorporate the second part of PUD 96-218 in which rates were initially to be determined into PUD 97-213 for the determination of costs of and permanent rates for SWBT's UNEs. The following parties subsequently intervened in this docket: Pioneer Long Distance, Inc. (Pioneer), Chickasaw Telecommunications Services, Inc.(Chickasaw), Dobson Wireless, Inc. (Dobson), MCI Telecommunications Corporation (MCI), the Attorney General, Brooks Fiber Communications of Oklahoma, Inc. and Brooks Fiber Communications of Tulsa, Inc. (Brooks). However, MCI withdrew from the cause on January 6, 1998, and the Attorney General did not actively participate in the docket.

On September 23, 1997, SWBT and AT&T filed a Joint Application in Cause No. PUD 970000442 (PUD 97-442) for a determination of the costs of and permanent rates for certain Southwestern Bell services other than those UNEs for which permanent rates were to be established in PUD 97-213. Thereafter, MCI, Brooks, the Attorney General, Chickasaw, Dobson, Cox and Pioneer intervened in PUD 97-442. However, pursuant to Order No. 418669, dated December 10, 1997, the Commission granted SWBT's Motion for a Determination of Intervenors' Rights, finding that the intervenors' rights to participate in PUD 97-442 should be govened by the same rules and procedures established for intervenors in PUD 96-218,[1] since PUD 97-442 was a continuation of the bifurcated PUD 96-218

[1] In PUD 96-218, the Attorney General and the Public Utility Division were permitted to intervene as parties, with the right to present testimony and

proceeding. Subsequently, MCI withdrew from the cause on January 6, 1998, and the Attorney General did not actively participate in the docket.

Hearings commenced on March 9, 1998. At the beginning of the hearing, Staff counsel announced that it had reached a nonunanimous stipulation with Cox in PUD 97-213 regarding proposed rates for UNEs. SWBT announced that although it was not supporting the stipulation, it would not oppose it or appeal a Commission order that adopted the stipulation *in toto*. Staff counsel also announced a nonunanimous stipulation in PUD 97-442. Again, SWBT announced that it was not supporting the stipulation, but would not oppose it or appeal a Commission order adopting the proposed rates contained in the stipulation in toto.

On April 14, 1998, in Order No. 422255, the Commission directed the ALJ to reopen the record for the submission of stricken testimony and exhibits that had been prefiled by Staff's consultants, Liberty Consulting. Following the submission of this evidence, interested parties were permitted to file briefs and affidavits regarding the impact of the introduction of Liberty's testimony in the record in this proceeding.

At the hearing, the parties presented their respective witnesses, whose testimony is summarized as follows:

II. Summary of Evidence

A. Southwestern Bell's Direct and Rebuttal Evidence and Testimony

1. Michael Auinbauh

In his direct testimony in PUD 97-213 SWBT witness Michael C. Auinbauh testified that he is Director--Wholesale Marketing/Regulatory Support for SWBT's Wholesale Marketing organization. In his testimony, he addressed the SWBT's proposed prices for a number of unbundled network elements (UNEs) including Switching, Common Transport and Signaling. He also described each UNE, the associated rate elements, and the pricing methodology.

Mr. Auinbauh referred to the cost and pricing standards established by this Commission for setting UNE rates. To determine prices that comply with these Commission requirements, SWBT conducted forward-looking economic cost studies using forward-looking long run incremental costs (LRIC) for the UNEs presented by Mr. Auinbauh. In addition, SWBT developed a common cost allocator that results in a reasonable allocation of common costs to each UNE.

Based on testimony presented by Bruce Sparling, Mr. Auinbauh proposed a rate design that is based on three separate geographic zones to recognize that costs vary geographically across the state. SWBT's forward-looking economic cost studies for UNEs were conducted as to these three zones so that unbundled prices could be developed on a geographically de-averaged basis. Of the UNE prices

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evidence and cross-examine witnesses. The particiation of other intervenors was limited to attendance at the hearing, access to materials filed in the case and the filig of written statements of position.

presented by Mr. Auinbauh, discernable geographically-based cost differences were found only as to local switching, analog line ports and common transport.

Testimony in this proceeding submitted by Barbara Smith (including the testimony of Linda Robey that Ms. Smith adopted) and Barry Moore identified recurring and nonrecurring UNE costs. SWBT proposed rates to recover each cost separately as recurring or non-recurring prices. These witnesses also identified both monthly recurring costs and usage sensitive costs. SWBT proposed rates that will recover these costs in the manner in which each is incurred: monthly recurring prices to recover monthly recurring costs and usage sensitive prices to recover usage sensitive costs.

Generally, SWBT's proposed UNE rates were developed by: (i) rounding the results of these witnesses' forward-looking economic cost results; (ii) allocating common costs to the nearest $.05 for monthly recurring and nonrecurring charges; and (iii) truncating the forward-looking economic cost results at the sixth decimal place for elements charged on a per minute-of-use (MOU) basis. This rate proposal gives SWBT an opportunity to earn a reasonable profit.

Mr. Auinbauh's testimony described the following UNE related charges:

- Local Switching;
- Call Blocking and Screening;
- Customized Routing;
- Port Charge Per Month;
- Feature Activation per Port Type;
- Centrex-like System Charges;
- Tandem Switching;
- Common Transport;
- SS7 Links - Cross Connects; and
- Unbundled Signaling.

Mr. Auinbauh described how each of those UNE related prices was determined. The chart attached as Exhibit A summarizes these pricing methodologies. The chart attached as Exhibit B lists the prices proposed by SWBT for all UNEs; those prices sponsored by Mr. Auinbauh are shaded.

In his rebuttal testimony in PUD 97-213 and 97-442, Mr. Auinbauh summarized the process under which the parties present cost information for the determination of prices in these dockets. He then discussed the major flaws in the cost calculations of the CLECs.

All the parties proposed prices that are calculated from a unit cost. These prices are derived by multiplying a unit cost by a common cost allocation factor. The differences in the presentations of the parties arise because the CLECs have based their calculations on their own theories about unit costs and common costs. These are the fundamental differences between the two approaches.

CLECs Assume a "Fantasy Network"

The CLECs have assumed that SWBT prices should be based on the costs of a theoretical, totally new network that does not exist today. SWBT's cost

witnesses demonstrated that the costs presented by the CLECs are inadequate to cover those costs associated with SWBT's existing network. The CLECs claim that SWBT should be required to provide unbundled access at prices based on the cost of an unbuilt, "superior" network. However, those prices would not allow SWBT the opportunity to recover its costs.

The prices proposed by the CLECs would accordingly violate the standards of the Telecommunications Act and the Commission rules. The Commission has established a cost standard based on LRIC, but this standard cannot be interpreted to mean that costs may be based on a speculative, fantasy network that does not exist today. In *Iowa Utilities Board v. FCC*, 120 F.3rd 753 at 813 (8th Cir. 1997), the court specifically held that unbundled access is to be based on SWBT's existing network. Therefore, the prices for these elements must be likewise based on SWBT's existing network. Ignoring this, the CLECs demand not only that prices be based on costs of all new, highly sophisticated systems, but that the Commission provide no opportunity for SWBT to recover the costs of developing such systems.

Combination of Elements

The CLECs (and particularly AT&T) also seek to require SWBT to provide elements in combination. This proposal seeks to relitigate issues previously decided by this Commission and is at odds with the provisions of the Telecommunications Act and the decision in *Iowa Utilities Board v. FCC*. In its Order No. 413709 issued on June 30, 1997, in the second AT&T arbitration (Cause Nos. PUD 96-218 and 97-175), the Commission rejected the call for combined UNEs. Nevertheless, that call is now presented again here. Pervasive in the CLEC cost proposals is the assumption that SWBT will provide network elements on a combined basis. The CLECs' proposal is therefore a collateral attack on the Commission's prior order.

The CLECs claim that lower prices could be achieved by assuming that SWBT will do the combining of network elements for the CLECs and that in doing so, could use the OSS that SWBT uses to provide bundled retail services. Mr. Auinbauh gave examples of how this claim is based on invalid assumptions that SWBT will not have to do work to deliver network elements to CLECs and that technology is available on the network to avoid this work. In any event, the proposals of the CLECs that SWBT be required to combine elements are in direct conflict with the Telecommunications Act, the Eighth Circuit's decision interpreting the Act and this Commission's previous decision in the second AT&T arbitration.

Mechanized Service Orders

Mr. Auinbauh also explained how SWBT is willing to accept (for the term of the CLECs' agreements) the $5 price for Mechanized Service Orders proposed by AT&T in the initial AT&T arbitration. Although SWBT has committed to implementing the mechanized OSS interfaces that Ms. Ham described in her testimony, those interfaces will not eliminate all manual intervention by SWBT employees. Although these systems are designed to provide efficient handling of service orders, service orders will not flow through SWBT's provisioning system at the 98% level assumed by Mr. Segura and adopted by the Liberty witnesses.

Signaling

Mr. Auinbauh pointed out that charges proposed for global title translations and STP point code additions would apply only when those items have been requested by a CLEC.

SWBT's per-call SS7 signaling charge is necessary because SWBT's system cannot recognize or measure separate SS7 usage by a CLEC customer using unbundled switching. Consequently, SWBT proposes to bill SS7 signaling on a per-call basis.

Shifting "Requesting Carrier" Responsibility to SWBT

Both the Telecommunications Act and the prior decision of this Commission in the second AT&T arbitration require CLECs to identify the elements or service that they seek from SWBT. Contrary to this, AT&T seeks to expand this cost docket to include a comprehensive set of prices for all network elements that either have been ordered or might be ordered in the future. SWBT cannot be required to anticipate all possible CLEC requests and to present prices now for what might be requested in the future. Rather, the requirement to identify items for inclusion under an Interconnection Agreement falls squarely with the requesting carrier and cannot be shifted to SWBT.

Summary of Cross-Examination of Michael C. Auinbauh

Mr. Auinbauh of SWBT testified concerning the rates being proposed by SWBT in these dockets. In addition, Mr. Auinbauh testified about the proposed stipulation between SWBT, Cox and Commission Staff regarding permanent rates for interconnection and UNEs. The rates contained in the proposed settlement between SWBT, Cox and Commission Staff were arrived at by Commission Staff. Those rates generally represent the midpoint between the rates proposed by AT&T and the rates proposed by SWBT. With regard to non-recurring rates, the proposed settlement rates were arrived at by taking two-thirds of the rates proposed by SWBT. The proposed settlement does not contain rates for cross-connects. SWBT presented costs and rates for these cross connect elements because Southwestern Bell is willing to do the combining of network elements at the rates that it has proposed.

SWBT will not perform cross-connects at rates less than what it has proposed. Because the proposed stipulated rates are less than what SWBT has proposed, it will not perform cross-connects at those rates. Mr. Auinbauh acknowledged that there are no cost studies that SWBT is pointing to and claiming this cost study times some joint and common cost factor gives you the rates set forth in the settlement. The Staff hired consultants in this docket who filed testimony on behalf of the Staff in this case. The Staff supported certain facets of SWBT's cost studies and supported some of the changes being recommended by AT&T in their dockets. SWBT reran its cost studies pursuant to directives and recommendations of the Staff. SWBT has no way of knowing whether the rates in the proposed settlement are based upon the SWBT rerun cost studies done at Staff's directive.

Those rates proposed by SWBT in these dockets are based upon the cost studies that the cost witnesses prepared and filed in this docket. The rates

proposed by SWBT are derived by taking SWBT's cost studies, and multiplying the results of those studies by SWBT's proposed joint and common cost allocator. SWBT believes that the rates that are set in this docket should be developed based upon the cost of SWBT's existing network.

If a requesting CLEC wishes to order a loop and port and have SWBT combine these two elements, the rates for these elements and for combining are found in the docket 213 rates or the network recombining service rates. The proposed settlement rates do not apply to a situation where the CLEC requests that SWBT combine the elements.

Mr. Auinbauh confirmed that, under the Interconnection Agreement between AT&T and SWBT in Oklahoma, four types of cross connects are available to AT&T, including a cross-connect from the MDF to the switch port. The Interconnection Agreement further provides that there will be "no charge" for the loop to switch port cross-connect and that the "agreed to" rates in the Interconnection Agreement (including the MDF to switch port cross-connect) are not the subject of these cost proceeding.

Under the proposed settlement between SWBT, Cox and Staff, SWBT will retain the collection of CCL and RIC to the extent that it exists and SWBT will retain intrastate toll.

Mr. Auinbauh confirmed that SWBT did not file a cost study to support its proposed $5.00 electronic service order charge. SWBT has filed cost studies in other jurisdictions for AIN-based customized routing but did not file such a study in Oklahoma.

SWBT is not currently able to measure terminating switched minutes. Because of the inability to measure terminating switched minutes, SWBT is proposing a temporary rate structure for switched rates. The temporary rate structure only applies during the time period when this problem of measuring terminating switch minutes exists and would not be necessary once SWBT is able to measure terminated switched minutes, which will be available in the long run.

2. Sharon Sadlon

In her rebuttal testimony in PUD 97-213 and 97-442, SWBT witness Sharon Sadlon testified that she is Area Manager-Translations for SWBT. She is considered a subject matter expert for NORTEL switches. In her rebuttal testimony, she recited her experience with the SWBT since 1974.

Ms. Sadlon developed time estimate packages for preparation and implementation of switch-based translations that were used for the service, feature and routing cost studies. Witnesses for AT&T and Liberty suggest that the detail for these underlying packages is inadequate or unsupported, that no effort was made to verify the results or that no documentation supports the results. Ms. Sadlon detailed the specifics of the time estimate package study that she conducted and demonstrated how it accurately reflects the time in which an employee of average skill will be able to perform the switch-based translations underlying the costs detailed in SWBT's cost studies. She included a description of the database that she maintains to support the findings in her time estimate packages.

Ms. Sadlon's experience in this area is based in actual work experience and technical ability developed over many years. She continues to practice those skills in the lab environment and to interact with the field work force day-to-day as a support person. She maintains her expertise through continued training and development of methods and procedures for translations.

Summary of Cross-Examination of Sharon Sadlon

Translation times depend on the type of switch used. Ms. Sadlon only has experience with Nortel switches. SWBT also uses Lucent and Ericson switches. Ms. Sadlon's only experience in translations was at a time in which translations were done manually. Today, translations are mechanized.

The cost study personnel requested Nortel translation times from Ms. Sadlon, but did not tell her how to measure the times. Instead, Ms. Sadlon developed a "template" of translations times based on her experience in the days of manual translations, and simply had translation managers review her estimates. Ms. Sadlon did not base any of her translation times on a well-observed time and motion study.

3. William C. Deere

In his direct testimony in PUD 97-213, SWBT witness William C. Deere testified he is the Regional Manager-Planning and Engineering for SWBT. In his testimony, he described SWBT's telecommunications network and the various technologies used to provide many of its unbundled network elements. In doing so, he described the network as it now exists. This is the relevant network to be considered in this docket because the present network and its related technologies will be used to provide unbundled network elements during the lives of the various contracts that will be subject to the UNE rates to be set here.

NETWORK ELEMENTS

Following is a general description of the equipment or technology used in SWBT's network for each of the following network elements. The overall configuration of these elements is depicted on the attached chart.

1) Network Interface Device (NID): A NID is a piece of equipment that provides the interconnection between the SWBT network and the telephone wiring in the customer's premises. It is usually mounted on the wall at a customer's premises. The equipment used for the NID may vary considerably depending on the class of the customer, as well as the customer's wiring arrangement. There are no costs for the unbundled NID or its use by a local service provider (LSP), except when it is necessary for SWBT to disconnect its loop drop wire or entrance facilities from the inside wiring of the customer's premises.

2) Unbundled Local Loops: The unbundled loop is the transmission facility from a SWBT end office to a demarcation point at a customer's premises. Unbundled loops may be provided by copper wire, digital loop carriers on copper cables, fiber optic transmission systems, or a combination thereof. In Oklahoma, a loop facility is typically a pair of copper wires that connects a customer's location to a central switching office.

In providing loop facilities, Voice Frequency and Digital Carrier Systems are the two (2) most common technologies currently used in the SWBT network. The type of facilities serving the customer's location is the prime factor determining the technology to be used. Other factors include distance between the SWBT end office and the customer's premises and the service requested by the customer.

3) Loop Cross-Connections: Cross-connections are wires, fibers or equipment that connect one piece of equipment to another on a semi-permanent basis. For example, a copper local loop may be cross-connected at the Main Distribution Frame (MDF) to a switch port of the central office switch by a simple pair of copper wires called a jumper. Different local loop options require different types of cross-connections.

4) Local Switching: Local switching provides the switching in the end office where the switch port is located. It provides call processing and switching to the proper line or trunk port within the switch. A call that originates on a line port may be completed to another line port on the same switch or to a trunk port for transport to another central office or to a SWBT tandem switch. The local switching unbundled element also includes the use of all features and functions available on the switch and any signaling functions necessary for the switch.

The central office is the hub of the loop facilities for a geographical area known as a wire center. The central office contains the switching machine that connects one customer's loop facilities to another, or a customer's loop facilities to a trunk to another central office. A central office provides the power to operate the telephones that are connected to the copper loop facilities. Each digital central office switch has multiple switch modules which contain the line ports and trunk ports that provide access to the switch. These ports convert analog signals to digital format before connecting the customer to the switch, and vice versa. They also transmit the signals necessary for call completion, such as off-hook, audible ringing, and power ringing. The analog electronic switch, the digital electronic switch, and the remote switching system are the three generations of switching technologies being used by SWBT. A remote switching system is an economical method of providing local program-controlled technology in small, densely populated areas within a large exchange or to serve a smaller exchange that is close to a larger office.

An important local switching element is the switch port. A port provides access to the basic functionality of the network switching components. An unbundled switch port consists of the central office switch hardware and software required to permit an LSP to access the SWBT switch so it could send or receive information over the SWBT network. SWBT has separated the switch port element from the switching element because each different port category has a different cost.

5) Tandem Switching: A tandem switch is designed to connect interoffice trunks to other interoffice trunks. These interoffice trunks from individual end offices are connected by the tandem switch to form a network connecting all offices. This docket involves the local tandem used in an exchange with more than one switching office.

6) Interoffice Transport: The interoffice trunking facilities are the communications paths between switching machines. They may be simple copper wires, electronic carrier systems, or fiber optic lightwave guides. Associated with the trunking is a signaling system. Although copper wires are the simplest form of interoffice trunking, they are not likely to be used for interconnection of new LECs due to their limited capacities and capabilities. Nevertheless, SWBT has provided this option in its rate proposals. The most likely form for interconnection is a lightwave transmission system that combines a time division multiplex signal onto fiber optic transmission facilities. SWBT has proposed rates for fiber-based dedicated interoffice transport at varying transmission speeds. Included as interoffice transport element are the following:

- Common interoffice transport occurs when an LSP's communications traffic is combined with that of SWBT or other carriers onto a common transmission facility or trunk group. SWBT uses a full range of digital and fiber technologies to provide common transport to LSPs.

- Dedicated interoffice transport uses interoffice transmission facilities that are dedicated to a single LSP. SWBT has proposed rates at varying transmission speeds. The higher transmission speeds (up to OC48) are available at individual case basis (ICB) rates.

- Dedicated transport entrance facilities are transmission paths from the SWBT central office to a LSP's location. Rates have been proposed for various speeds, and ICB rates are available for the higher speeds.

- Dedicated transport cross-connections are the equipment needed to connect the interoffice dedicated transport transmission facilities to the entrance facilities. Rates have been proposed at varying capacities, with ICB rates available at the higher speeds.

7) Digital Cross-Connects: A digital cross-connect system (DCS) is an electronic device that provides the capability of rearranging circuits on high speed facilities without the need to demultiplex the signals. Without a DCS, signals cannot be exchanged between high speed circuits without returning all the circuits to lower speed electrical signals. SWBT has developed different rates for connecting various speed circuits to the DCS because each type of circuit requires a different electronic port card for termination on the DCS and a varying capacity of the switching network on an ongoing basis.

8) Multiplexing Technologies: Multiplexing is the process of combining multiple telecommunication paths onto a lesser number of paths for transmission to a distant location. This process makes the network operate more efficiently and reduces cost. SWBT has provided rates for varying multiplex capacities.

9) Unbundled Signaling: Signaling is the communication of control information between the elements of a communication network. Signaling System 7 (SS7) is a set of national standard network protocols used to transfer signals in a telecommunications network. The three primary elements of the SS7 network

are the Signal Transfer Points (STP), signaling links and Service Switching Points (SSP). An STP is a packet switching device providing signaling distribution for the network. An SSP is a central office or tandem switch machine that is equipped to process SS7 signals. The transmission paths that connect SSPs and STPs are called signaling links. An LSP may obtain the necessary signaling links by using collocated facilities between its own local switch or STP and the SWBT STP. Alternatively, dedicated interoffice transport facilities can be used. In either case, the LSP obtains access to elements of SWBT's SS7 network.

10) SS7 Links Cross-Connects: These are cross-connections between the transmission facilities of the SS7 links and the STP switch.

11) Access to Operator and Directory Assistance: This element involves the provision of Operator and Directory Assistance for LSPs. Access to these elements is available when an LSP customer served through a SWBT central office dials 1+411, 0, 0+ or 1+.

12) Database Access: The SWBT network contains various databases that may be accessed for particular inquiries. For example, when a customer dials an 800 or 888 number, the network translates the toll-free number to an actual network number. To do so, the network must access a database for information concerning the actual network number to be called. The Advanced Intelligent Network also requires database queries.

13) Temporary Rate for Local Switching: This temporary rate is designed to recover the costs of the local switching at the originating office, the common transport, the tandem switching and the local switching at the terminating central office. Current network technology does not make it possible to measure each of these elements individually. Until these individual elements can all be measured, this temporary rate is proposed to emulate, on an average basis, the estimated use of the elements involved. The temporary rate is based on the average of all LSP calls expected to be completed over the network and includes:

- the switching rate for the originating central office, plus
- the switching rate for the terminating central office, plus
- the average number of miles between offices for common transport times the minutes of use, plus
- the common transport termination rate, plus
- 50% of the tandem switching rate (the entire rate is not included because on average only about half of the calls use the tandem switch).

14) Call Blocking/Screening: Call blocking or screening is used when customers wish to have their telephone line arranged so that calls to specific codes (e.g., "900" numbers) cannot be completed.

15) The following additional network functions are proposed as an ICB rate. SWBT's policy regarding ICB rates is discussed in Barbara Smith's testimony.

- Global Title Translations (GTT) are routing instructions located in a STP. If an LSP uses SWBT's databases and the

associated GTT to route calls to a SWBT database, then there is no charge for the GTT. However, if a LSP builds its own database and has individual queries sent to its own database, additional GTTs will be required in the SWBT STP to route the query. Thus, SWBT has proposed an ICB rate to recover the cost of creating and maintaining an additional GTT.

- Dark fiber could be used as an interoffice transport and as a portion of the loop plant facilities. The Commission has required SWBT to provide access to regulated dark fiber as an unbundled network element. For this element, termination arrangements, as well as the size of the cables, vary by location. The ICB method is the most appropriate method to determine the correct dark fiber price for each carrier, in order to avoid complaints by carriers that an "average cost" rate model is not equitable.

In his direct testimony in PUD 97-442, Mr. Deere described SWBT's telecommunications network that is to be the subject of the cost studies in this docket. In doing so, he described the network as it now exists. This is the relevant network to be considered in this docket because the present network and its related technologies will be used during the life of the contracts which are the subject of the cost studies in this docket.

Mr. Deere gave a general description of the equipment or technology used in SWBT's network for elements to be offered to Local Service Providers (LSPs). *The network elements listed were covered in Mr. Deere's testimony in PUD 97-213, except for 911 Interconnection and Interim Number Portability (as set out below).*

1) 911 Interconnection: The 911 service is based on the use of 911 as a national standard abbreviated dialing code to call for help in an emergency situation. SWBT provides 911 service in each exchange at the written request of a unit of state or local government lawfully authorized to subscribe to the service under the terms and conditions of a 911 tariff. When the 911 code is established in an exchange, any 911 call originating from that exchange is connected to a pre-determined public safety agency where the call is answered and dispatched by that agency.

The enhanced 911 service is an advanced level of 911 which provides additional features over and above the 911 dialing code. The first feature described is the Automatic Number Identification (ANI). It displays the telephone number of the person who dialed 911 to the public safety agency as soon as the call is answered. The Automatic Location Identification (ALI) feature, in conjunction with the ANI, performs a retrieval of the 911 caller's name, address, class of service, and other pre-determined information from a telephone company computer for display to the public safety agency. Finally, the Selective Routing (SR) feature establishes routing criteria for the telephone company to use automatically to distribute emergency calls among many public safety agencies. SR makes it possible to connect each 911 call to a pre-determined primary public safety agency based on the address from which a 911 call is made. SR is most often used to route the 911 call to either the police or sheriff with law enforcement jurisdiction for that caller's geographic location.

SWBT's charges to the LSP are based on the 911 system features associated with the 911 network in the community involved and the number of telephone lines the LSP serves. There is a monthly rate and non-recurring charge: (1) for each 911 trunk connecting the LSP network to the SWBT network and (2) per 1,000 exchange access arrangements in the LSP's service area.

The 911 database contains the information associated with each end-user customer and is created and updated by each telephone service provider. The database is the source of information about end-user customers (telephone number, name, address, class of service) needed for 911 purposes.

2) Interim Number Portability: Interim Number Portability (INP) permits a telephone service customer who switches local service from SWBT to a switch-based LSP to retain the telephone number previously assigned by SWBT.

There are two service options. The first, called the INP-Remote uses a Remote Call Forwarding (RCF) technology. With this option, a SWBT switch receives all calls directed to a telephone number assigned to that switch. If the called number is equipped with the INP-Remote service option, the SWBT switch uses information in its memory to determine the new telephone number the LSP has assigned to the customer. The SWBT switch then sends the new telephone number and the call to the LSP switch. The LSP switch uses the new number to complete the call to the customer.

The second service option is INP-Direct, which uses Direct Inward Dialing (DID) technology. With this option all calls directed to telephone numbers assigned to a SWBT switch are sent to that switch. If a called number is assigned the INP-Direct service option, the call is routed to a trunk group that connects to the LSP's switch. The dialed digits and the call are transmitted on the trunk group to the LSP's switch and the LSP's switch determines what new telephone number has been assigned to the customer. The call is then completed to this new telephone number by the LSP's switch.

In his rebuttal testimony in PUD 97-213 and 97-442, Mr. Deere presented rebuttal to testimony of various CLEC and Liberty witnesses concerning network issues.

Mr. Deere first rebutted the contention of Mr. Segura that the provision of UNEs somehow equates to what has traditionally been known as "Plain Old Telephone Service" or "POTS." In today's environment, POTS is done either on a retail basis (simple single-line service) or wholesale basis (total service resale). There is no such thing as a combination of UNEs that is offered by SWBT as a UNE service or a "combined" UNE. For example, there is a loop UNE and a port UNE, each separate and unbundled, but not a loop and port as a single element. Because of this separation, these elements cannot be treated in the same manner as a POTS service for any purpose.

Mr. Deere explained that a UNE more closely resembles a point-to-point circuit rather than a POTS circuit. With a UNE, as with a point-to-point circuit, there are two clearly defined customer demarcation points. For example, for an unbundled loop, one demarcation point is the NID at a customer's physical address and the other is the CLEC's point of access. This method of identifying UNEs is essential since the CLEC may use SWBT UNEs in combination with other

network elements to create an end-to-end service for the CLEC customer. Furthermore, to accurately isolate any trouble, clearly defined demarcation points are necessary. If the CLEC customer reports a problem, SWBT must be able to determine if the cause is on its side of the demarcation or on the CLEC side.

Unbundled loops require work by SWBT personnel to properly engineer and design the equipment and connections needed to provide service to the CLEC. This work must always be performed because of the requirement for cross connection wiring.

UNEs cannot be provisioned with current POTS process flows in associated Operations Systems Support (OSS). Because of this, SWBT has elected to provision UNEs via a currently available process using a non-POTS system called TIRKS.

Mr. Deere explained in detail the specific functions which must be performed by SWBT when provisioning UNEs. He further explained that SWBT must develop new OSS or must enhance existing OS systems to perform the functions he describes. Either option will incur substantial cost and delays to perform functions currently preformed by TIRKS. He concluded that at this time it does not make good business sense to develop OS systems to duplicate functionality that currently exists in TIRKS.

Mr. Deere also detailed five different methods and conditions under which CLECs are provided access to UNEs. CLECs may use the methods indicated to access and combine identified UNEs within SWBT's central offices or tandem offices.

Several opposing witnesses assert various "inefficiencies" in SWBT's network and propose that costs should be based on a theoretical network that they view as more efficient. These proposals generally ignore the costs of replacing existing facilities and overstate the purported efficiencies to be gained. If the Commission were to adopt these proposals, SWBT costs would be understated and rates would be established on the basis of a hypothetical, fantasy network that does not and can not exist. The following are examples of erroneous "cost reduction" proposals offered by various CLECs to reduce SWBT rates:

- AT&T's Mr. Turner asserts that it is more efficient to cable directly from the collocation cage to the main distribution frame rather than going through an intermediate frame. SWBT frames are engineered so as to minimize the time required to make cross connects and to reduce the possibility of maintenance problems. If the cables were installed directly as proposed by Mr. Turner, these advantages would be lost.

- Arguing for reduced cross connect costs, AT&T's Mr. Segura asserts that running jumper cables for cross connects is as simple as hooking up stereo speakers using speaker wires. Unlike a home stereo system, distributing frames can have thousands of termination points. Jumper wires must be carefully run among thousands of other connections in a manner that will not disrupt service to other customers.

- The mechanized loop test system cannot determine the proper loop type and cannot provide an accurate and reliable test. Accordingly, this system cannot be used to test UNEs. SWBT's provisioning of UNE loops with remote test points is necessary to allow SWBT to perform remote

testing without having to insert test shoes in the circuit manually, thus avoiding intrusive testing as suggested by Mr. Segura.

- Mr. Krafcik asserts that when a CLEC purchases an unbundled loop, it should be presumed to be installed and working. To the contrary, when SWBT receives an order for an unbundled loop, this loop must be extended to the point of access of the CLEC. As part of this activity, the circuit must be tested to ensure that the loop is operational, that there is continuity from the central office to the NID at the customer's location and that overall transmission levels are met.

- This testing should not be unbundled because the testing process is an inherent part of providing such a service. Mr. Rhinehart's proposal that AT&T could conduct its own test simply does not eliminate the need for SWBT to provide testing. Mr. Segura admits in his deposition that since the hypothetical network he proposed is not actually in place, someone else would need to perform the test. Furthermore, in order for SWBT to located the trouble and dispatch the appropriate technician, SWBT must conduct its own test. It would be unlikely that the CLEC would be able to locate the part of the circuit where the trouble exists and determine whether an inside or outside technician should be dispatched.

- Mr. Segura suggests a standard translation numbering scheme as more "efficient." Such a "standard" system is impractical because of the variety and uniqueness of each end office translation. That variety will only grow more complex as competition introduces additional requirements such as customized routing. Retranslating the entire network (approximately 1200 switches) to a standard translation numbering scheme would be most expensive and disruptive and would jeopardize service reliability.

- Field work is required to provide UNEs. Installation and maintenance work is required on UNE service orders for new service and may be required on other UNE requests.

- Although Mr. Segura asserts that little if any outside field activities is needed, his contention is based on the invalid assumption that facilities to eliminate this need are already in place. For example, "soft dial tone," on which Mr. Segura bases his contention, is not available in Oklahoma.

- SWBT would not be able to use dedicated inside plant and dedicated outside plant (DIP and DOP) to avoid expenses in providing UNEs, as proposed by the CLECs. DIP and DOP will not exist where new service is being provided to a location. Furthermore, if the CLEC orders an unbundled loop, SWBT must remove the existing jumpers and place a new cross connect from the unbundled loop to the point of access of the CLEC. A second cross connect would also be required to interconnect the unbundled switching port to the point of access. Field visits may also be necessary to provide the particular UNE required by the CLEC (for example, cross connects at the FDI). Additionally, DOP is not

always applicable. For example, the end user may request additional service (such as a second line) thru a CLEC while maintaining existing service thru SWBT.

- Mr. Segura and Mr. Krafcik suggest that manual cross connects can be eliminated. Mr. Deere points out that every unbundled loop or port requested will require a manually established jumper between the loop and the CLEC point of access and that no technology is available for remotely running cross connects in the field where the loop service is provided using copper plant (which represents more than 91% of Oklahoma's loops). Furthermore, there is no capability in SWBT's Oklahoma network for remotely running cross connects where loops are provided on fiber loop plant.

- AT&T has erroneously assumed in its cost studies that 30% of SWBT loops will utilize the TR-303 integrated loop carrier. In fact, at the end of 1997, none of the TR-303 technology was being used by SWBT in Oklahoma. No expense saving has been identified that would offset the substantially higher investment required to provide service with this technology.

- Messrs. Turner and Klick assert that SWBT's network is inefficient because it does not make adequate use of the stacking of SONET rings. Stacking of rings is only one alternative to maintaining an efficient network. In some cases, stacking of rings indicates *inefficiency* because the initial ring was not adequate sized to handle demand.

- AT&T assumes a perfect network in which all network elements will be utilized at optimal levels and stay at that fill level all the time. This is unrealistic and will never be achieved by any network, actual or hypothetical.

- Mr. Zubkus presumes that fill levels will rise in a competitive environment. To the contrary, when facilities-based CLECs enter a market, a *decline* in utilization can be expected.

- The purported "underutilization" of switch processors and SS7 links asserted by Ms. Petzinger and Messrs. Klick and Hlavac is not the result of inefficiency that can be avoided. The equipment with the smallest capacity available will sometimes have low utilization because of its particular location and application. This cannot be avoided because smaller processors are not available from the vendors. Furthermore, equipment is sized to handle peak demands and is not necessarily underutilized simply because it reflects a lower utilization factor.

- Mr. Klick would require SWBT to replace its existing STP technology with the latest version available. This would be highly inefficient and costly, comparable to discarding a one-year-old television because a new model has some new feature.

- Low STP utilization that Mr. Hlavac objects to is the result of a regulatory requirement that SWBT maintain STP pairs in every LATA.

This requires SWBT to provide considerably more capacity than required for Oklahoma LATAs.

- Evaluation of the cost effectiveness of new switching technology that permits DS3 trunk interface to the switch has not yet been completed. Including this technology in cost studies at this time is inappropriate.

- Mr. Segura's proposal to use DCS and EDSX technology in cost studies for cross connection of the digital loop instead of DSX is not cost effective. A conversion to this technology would cost millions and would result in no net benefit to the customer.

- Because initial lines cost less than growth lines, Mr. Hlavac questions the effectiveness of providing for growth in two year intervals, as opposed to including all growth lines in an initial job. Mr. Hlavac's suggestion would not save costs. Initial and growth jobs are designed to provide for about two years' growth. This design is a cost-effective method of providing for growth demand; the expenditure of capital for plant that does not generate revenue (but may in the future) is not efficient. Similarly, eliminating the ninth year of the economic life from the switching cost study would interfere with SWBT's obligation as carrier of last resort to provide for growth in all years of the economic life cycle of a switching system.

- Dr. Hlavac recommends that switch minutes of use be increased in cost studies by 11.2% since the processor can handle the increase at current utilization. However, this ignores the companion costs of increasing the capacity of trunks, service circuits, switch module and feature-related hardware due to the increased usage.

- Ms. Petzinger's testimony on switching price per line is based on the assumption that all switching systems in Oklahoma have at least 15,000 access lines. In fact, only 12.4% of these systems exceed 15,000 lines.

__ Summary of Cross-Examination of William C. Deere

Mr. Deere of SWBT testified that SWBT does provide a loop from its central office to the customer premise as part of the service that SWBT provides to its end user customers. In providing POTS service to its customers, SWBT provides a loop from the customer premise to the SWBT central office. At the central office, the loop ties to the main distribution frame. SWBT will then run a jumper wire from the MDF to the switch port. Additional services that SWBT provides to its customers include a billing process and service order process. When SWBT provides flat rate residential service to its customer, it does not typically provision that service through the circuit provisioning center ("CPC") organization. In addition, there are some simple business services that SWBT provisions without processing through the CPC.

SWBT employs a policy of dedicated inside plant in which it is SWBT's policy to leave the cross connect or jumper wire from the MDF to the switch port

in place as long as SWBT has sufficient spare termination. Under this policy, if an existing SWBT customer terminates service and moves locations, SWBT will not disconnect the jumper wire from the MDF to the port. Thus, when a new customer moves into that location, service can be provisioned to that customer without running a cross-connect to the port.

SWBT has equipped its central office switches with the necessary software to activate Advance Intelligent Network ("AIN") triggers. Thus, if a CLEC requests a product such as AIN customized routing, there is AIN equipment in each of the states to accommodate that request.

SWBT has deployed SONET technology in Oklahoma City and perhaps in Tulsa. Where SONET technology is deployed, it would include a SONET ring. Mr. Deere acknowledged that SONET rings are the preferred architecture in metro areas.

Mr. Deere is aware that SWBT performs demand forecasts and has performed such forecasts for the Oklahoma market. Demand forecasts examine second line growth, residential growth, and business growth and those demand forecasts are shared with the network engineers for planning purposes. Demand forecast in some cases will forecast demand growth for the next 20 years.

According to a recent demand forecast for the State of Oklahoma, the growth rate in 1996 will be roughly 32 percent for additional residential lines. In 1997, the increase of growth in additional lines is 22.49 percent. In 1998, the increase in additional growth lines is projected at 19.23 percent.

SWBT's policy in Oklahoma is to deploy loop facilities in planned subdivisions which are sized for ultimate requirements. In these neighborhoods, SWBT will deploy loop facilities for the entire neighborhood even though some portion of the neighborhood will not be developed until some time in the future. In phased developments, SWBT deploys all of the facilities for each phase of the development. For example, SWBT will deploy all of the loops necessary for ultimate requirements for each phase of the development. SWBT sizes its rural distribution cables using identified and forecasted growth for a maximum of 10 years.

Mr. Deere admitted that SWBT's network in Oklahoma has been built over time. The engineer in the outside plant facility who was making decisions about how to deploy those facilities would make decisions based on the information known to him at that time. An engineer deciding how to deploy that same outside plant today may or may not choose the same method of deployment. The equipment in SWBT's network has been purchased over time. If SWBT were to replace its equipment today, it may or may not purchase the same equipment.

In SWBT's network, there is already a cross-connect between the loop and the port for an existing SWBT customer. There are circumstances under which SWBT leaves the jumper wire in place from the loop to the port in place even when an existing SWBT customer terminates or disconnects service. For example, if a house becomes vacant and there is reason to believe that the house will become occupied by another customer within a reasonable time. SWBT will not disconnect that jumper wire from the MDF to the port so that when the new customer moves in, service can be activated for that customer without running a cross-connect. Further, if a customer goes on a two-month vacation, SWBT will typically not

disconnect the jumper wire from the MDF to the port, but would rather turn down service at the switch. In this situation, the customer's service can be activated at the switch without running a cross-connect from the MDF to the port. From a technical point of view, if an existing SWBT customer already had a loop and port connected by a jumper wire that service or network elements could be handed over to AT&T without disconnecting the jumper wire from the MDF to the switch port. In that situation it would not be necessary to run a cross connect over to another part of the central office and then run another jumper wire from the port over to some other area of the central office in order to provision UNE's to AT&T.

Mr. Deere agreed that the ultimate fill for its loop distribution facilities is between 83-85%. That is when the loop distribution fill gets to the 83 to 85 percent range, SWBT starts looking to add relief facilities. When the fill on the feeder facilities gets in the 80 to 90 percent range, SWBT starts looking at adding relief in the feeder facilities.

In many cases SWBT tapers its feeder plant as it leaves the central office heading towards customer premises. Tapering of feeder plant means that one larger cable will leave the central office. As distribution facilities are needed, smaller cables will be pulled from the feeder cable. The feeder cable then gets smaller and smaller as it gets farther away from the central office. Tapering of feeder plant is in contrast to having individual feeder cables for each serving area. Mr. Deere agreed that, as a general rule, it is more economical to taper feeder plant than it is to run separate feeder cable for each serving area.

Twenty-five percent of loops in Oklahoma do not have an FDI associated with that loop. A cable that goes a short distance from a central office directly into the customer premises is a feeder only loop. An example of a feeder only loop exists in downtown Oklahoma City where the feeder goes from SWBT's central office across the street to a business building and terminates on a frame within the building.

SWBT typically installs two-pair drops for every residence and for a mid-sized business, SWBT typically installs more than 8 pair drops.

SWBT does engage in pole sharing in Oklahoma and has an arrangement with the power company where SWBT uses the power company's poles and the power company uses SWBT's poles.

According to SWBT's deployment guidelines, the service life for switches in SWBT's network is between 10 to 20 years. When SWBT makes the decision in the network as to whether or not to install new switches, it typically is based upon what has been given as depreciation lifes by various Commissions. There are some 5E switches currently deployed and operated in Oklahoma which SWBT installed more than 10 years ago. SWBT's switches run out of lines roughly every two years because that's the way they are designed. Growth happens during that time frame but lines are easy to add but replacing the processor is a major project. SWBT buys the necessary hardware for some features at the time you place an initial switch. Some in input-output ports are included in the initial switch placement. Some trunking is included in the original price of the switch. SWBT does employ centralized sparing in Oklahoma. Many of the features of the switch can be

activated electronically without any manual effort. Almost all of the analog features of the switch can be activated electronically.

SWBT does not deploy one DS3 for every 28 DS1s in its network today. In SWBT's network, some DS3s run from a SWBT Central Office to an AT&T point of presence. SONET equipment in SWBT's network has what is called a high side and a low side and that on the low side you have some circuit packs. On the high side you have some out port circuit packs. Most circuit packs can be added or they are necessary. On the common or control circuit packs, SWBT experiences 100 percent utilization.

4. William E. Avera

In his direct testimony in PUD 97-213, SWBT witness William E. Avera testified that he is a financial and economic counselor with FINCAP, Inc., and this testimony addressed the cost of capital for SWBT to use in its forward-looking cost studies. In his opinion, 10.69% is a reasonable cost of capital to use in these studies. If, however, the 10.69% cost of capital is not used, the forward-looking cost of capital should be 11.25%, which the FCC cites in its August 1996 Interconnection Order. Note: AT&T and SWBT entered into a Stipulation that the cost of capital be 10.0%. Cox did not join this stipulation.

Although the 10.69% return is based upon SWBT's estimated cost of capital made in September 1995, it remains appropriate today. The increasing competition and structural changes that now confront SWBT produce higher risks and greater uncertainties. These changes, reinforced by trends in the capital markets, are documented by Dr. Avera and suggest that the forward-looking cost of capital would be higher than 10.69%. In fact, a full analysis of SWBT's forward-looking cost of capital would result in a higher estimate.

This 10.69% return is well within the range of forward-looking returns that would reflect the significant risks and uncertainties facing SWBT in Oklahoma. Any lower return would ignore the emerging competitive realities facing SWBT and would undermine economic incentives to maintain a high quality telecommunications infrastructure. In short, consumers and the Oklahoma economy have much to lose if the cost of capital is set too low.

COMPETITION AND THE COST OF CAPITAL

The cost of capital incurred by SWBT and other LECs has increased, and will continue to increase, due to greater competition. Dependence by LECs on high-volume, high-density local customers, and the access charges derived from serving them, makes their revenues vulnerable in a competitive environment. The loss of large customers to local service providers (LSPs) may not only strand capital investment, but may also place pressure on the rates charged to remaining customers. The high operating leverage inherent in providing local telephone service did not pose unmanageable problems for LECs under traditional regulation. Now, the transition to competitive markets is producing increased revenue volatility at the same time that heavier capital spending is required to meet competitive challenges and avoid bypass. Finally, even though competition has been allowed into their industry, LECs have not been relieved of their continuing obligation to provide quality universal service to customers in their area of operation.

In Oklahoma, for example, the Commission has approved major telephone rule revisions designed to authorize and encourage competition in local telecommunications service markets. Contemporaneously, the Commission authorized competition in the intraLATA toll, pay telephone, and special access markets. Since the Commission's local competition rules were adopted last year, dozens of firms have filed applications for certificates of authority to provide what previously were monopoly telecommunications services.

To meet the challenges posed by competitive bypass technologies, LECs such as SWBT have been forced to invest heavily in new network architecture. An example in Oklahoma would be the network upgrades required by the Commission's revisions to its minimum service standards rules. LECs are faced with the need to support significant investment in the telecommunications infrastructure through both internal and external funding.

These structural local exchange service market changes increase SWBT's cost of capital. Uncertainties associated with the transition to competition almost certainly have led to a higher cost of capital for the local exchange segment of SWBT's operations. Increasing competition has resulted in investors requiring higher returns on equity relative to traditional utility returns. Thicker equity cushions are required to maintain bond ratings. These trends likely will continue in the future and exert upward pressure on the cost of capital for all LEC services. These uncertainties are accentuated by the fact that, while LSPs have the choice of either bypassing LECs or reselling their services, state and federal regulators must protect the public policy goal of universal service without penalizing incumbents.

CAPITAL STRUCTURE

To be relevant for estimating SWBT's cost of capital, the forward-looking capital structure target (which the FCC adopted) should be the one that investors expect. However, little weight should be given to current LEC capital structures because they do not reflect the forward-looking targets expected by investors. Instead, a LEC's current mix of debt and equity reflects past decisions, when assets were invested in regulated activities. This capital structure has changed slowly due to the lingering effects of those past decisions. Current capital structures thus are inherently backward-looking. A forward-looking capital structure would contain much more equity. Another reason to give little weight to current telephone holding company capital structures is their ongoing restructuring to prepare for competition. Finally, reported capital structures for SWBT's parent, SBC Communications, Inc. (SBC), and other telephone holding companies reflect their Leverage Stock Ownership Plan (LESOP) debt. As the LESOP repays the debt, SBC's liability is reduced and its equity is restored.

In general, the capital structure of a major corporation like SBC can change only slowly. Large issues of stock are costly to current stockholders. Adding equity through retained earnings is constrained by the availability of the corporation's net income and the necessity to avoid an erratic dividend policy. Most debt issues have limitations on prepayment.

REGULATORY POLICY AND COST OF CAPITAL

Any updating of SWBT's 1995 cost of capital estimate invariably would lead to a protracted regulatory review. Thus, such updating is not a viable option and the risk-adjusted cost of capital for telecommunications companies will remain a moving target. Indeed, by leaving the 11.25% rate of return in place, the FCC affirmed that a regulatory effort to micro-manipulate the cost of capital would not serve the consumer.

Consumers in Oklahoma are best served by the Commission's maintaining focus on the large issues of regulatory transition. Based upon the forward-looking basis that the FCC adopted for cost study purposes, it is clear that there is increasing risk facing critical services. Future capital market conditions are impossible to predict, but it is reasonable to expect that the cost of capital will not fall below the 10.69% return SWBT used in its cost studies.

Mr. Avera's testimony in PUD-442 is identical to his testimony in Cause No. PUD 97-213.

In his rebutted testimony in PUD 97-213 and 97-442, Dr. Avera took issue with the cost of capital proposal submitted by Dr. Collins on behalf of Cox Oklahoma Telecom, Inc. Although Dr. Collins correctly stated that the cost of capital must be forward looking and must reflect the specific risk of network elements, he failed to follow his own counsel. His analysis used backward looking measures of risk and capital structure and failed to consider the unique risk associated with leasing long lived network facilities in an increasingly competitive environment.

Dr. Collins completely ignored the forward looking approach in his presentation. Rather, he based his recommendation on a simplified version of the discounted cash flow model that has been used for decades in traditional ratemaking proceedings. Most significantly, he compounded this error by employing a backward looking capital structure that grossly underestimates the proportion of equity in SWBT's future capital structure. As a result, Dr. Collins' recommendation is not consistent with the rules of this Commission or with the Telecommunications Act of 1996.

Dr. Collins also misrepresented the basis for Dr. Avera's recommendation. Dr. Avera did not conduct a traditional analysis of component costs to arrive at his recommended 10.69% cost of capital. Rather, he adopted SWBT's 1995 estimate of weighted average cost of capital, then compared it to the forward-looking cost of capital adopted by the FCC to verify that the 1995 estimate is conservative when applied to a competitive environment.

Dr. Avera discussed the increased risk involved in the leasing of UNEs and the effect of that risk on the cost of capital. Capital costs originate in capital markets and only the perception of investors determines what risks are relevant. Investors consider a leasing business as more risky. Like computers, network facilities suffer from imbedded technology. Investors understand that the only way to earn a return on - and return of - capital invested in a leased asset is to generate sufficient revenue over its entire life cycle. Investors know that regulatory agencies change their views, legislative bodies pass new laws and courts throw out the results of the other two. That risk and